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ABSTRACT

This paper examines and illustrates pre-planning strategies for online learning programs that utilize course and learning management systems (CMSs and LMSs) and looks at the advantages and disadvantages of such systems according to certain basic criteria for effective, successful teaching and learning. Well in advance of adopting an online course or learning management system, institutional administrators or program directors should take the time to assess faculty receptiveness to and facility with Web-enhanced or online learning programs. This is a crucial preliminary step that is often missed. Colleges and universities need to have a training facility of sorts, a support system in place for their teaching faculty as they learn this new approach to teaching. Some effective strategies include: establish a plan for professional development; organize study groups; establish curriculum development teams; and recruit technology coaches. The best approach to faculty training involves blending these strategies to help convince faculty that the system works, and that help is there if they need it. A chart is presented, which details the CMS and LMS features than can supplement, extend, and emulate the activities of teaching and learning. Keeping in mind the criteria of effective teaching and learning, and how these criteria are represented by available learning systems, a thorough exploration of tool features should be performed in order to satisfy the basic needs of instructors and students. Another chart lists course, collaboration, assessment, and student/management tools. (AEF)

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How To, and Why?
What You Should Know About Course

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Abstract: Well over a hundred course and learning management systems are available on the market today. So the time and energy an institution might invest in researching considerable. Unfortunately, many institutions seek out systems that are technically robust rather than ten has less to do with *learning* than *management*. The problem is that end-users, instructors and students, may be disinclined to use the system; all of the system's compelling administrative features will prove meaningless to them if the user interface makes learning cumbersome for students or if the system itself is so complicated that instructors develop strategies for avoidance. Because the success (or failure) of any learning management system is largely dependent upon the effective use instructors and students make of it, institutions would do well to consider—prior to system hunting, in fact—*how* they plan to train instructors and students to use the system and *why* they think such a system will benefit them in teaching and learning.

Introduction

This paper examines and illustrates pre-planning strategies for online learning programs that utilize course and learning management systems (CMSs and LMSs) and critiques the advantages and disadvantages of such systems according to certain basic criteria for effective, successful teaching and learning. It argues that teaching and learning concerns need to be at the forefront of system adoption decisions and system installations, especially in light of the cost—the educational cost of hampered teaching and learning, of course, but also the literal expense of the systems themselves. The Gartner Group suggests that institutions serving 10,000 users should expect to pay approximately $110,000 to install course and/or learning management systems and an additional $110,000 to use the systems (Aldrich, 2000).

Before the How and the Why

Well in advance of adopting an online course or learning management system, institutional administrators or program directors should take the time to assess faculty receptiveness to and facility with web-enhanced or online learning programs. This is a crucial preliminary step that is often missed--as is the step to assess students, though primarily for the kind of computer access they might have rather than their computer interest or competence levels. While a number of institutions perform market research to discern whether or not there is a genuine, fee-paying audience for the online education they might dispense, they engage in a good deal of guess work where faculty are concerned. Unfortunately, this "strategy" is far from atypical; offering the sun and the moon but proffering lumps of coal is the stuff of short-lived businesses and failed institutional programming everywhere. Internet-connected computers in every faculty member's office are merely a start, a good start, but hardly a means to an end. Most instructors and university professors are simply not ready to "set aside their roles as teachers and instead become designers of learning experiences, processes, and

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environments" (Dunderstadt, 1999, p.7). And in order to get ready, most of them will need some very good reasons. Already overburdened with heavy course loads, faculty are not exactly thrilled about expending hundreds of hours discovering how a new course or learning management system works; many remain reluctant to use a time-consuming or cumbersome technology and require proof of its educational value.

A proactive approach can go a long way in avoiding the "cart before the horse" syndrome, which emphasizes the purchase and installation of learning management systems "without providing sufficient funding for the staff learning required to win a reasonable return on the huge investments being made" (McKenzie, 2001). While assessing a school's need for course management software, one should also consider student requirements. Schools need to focus their efforts on uses of these systems that will be curriculum-rich, and not simply glitzy--what some call "powerpointlessness" (McKenzie, 2001).

How, Part I: A Simple Plan

The key to planning simply is planning introspectively. When people work with what they have and know, there aren't as many variables. Of course, a person must have what he thinks he has, or she must know what she thinks she knows in order to develop a plan that is sincere and sensible. An introspective individual does not think "I have a computer, so I'll start teaching online." She wonders, instead, about her knowledge of the necessary technologies, about how much time it will take to become an adept user of these technologies, about her own comfort level with change and experimentation, especially where live human subjects (students) are involved. An introspective individual considers his basic capacity and fitness. He asks, "Am I up to the

In order to facilitate a basic capacity and fitness, colleges and universities need to have a training facility of sorts, a support system in place for their teaching faculty as they learn their way around this new approach to teaching. Some effective strategies are as follows:

1. Establish a plan for professional development. Administrators and professors should draw up a new set of guidelines for professional development that include the new course or learning management system. Junior faculty should receive credit towards tenure for their work with the system, while more senior faculty should also be in a position to derive credit towards promotion for their participation.
2. Organize study groups. Instructors should meet frequently to discuss their triumphs with and concerns about the new system. Such study groups are ideal for problem solving and for brainstorming. Many instructors come out of these meetings with a new enthusiasm for the educational benefits of learning management tools.
3. Establish curriculum development teams. Instructors in the same academic area can cooperate to develop their own standards-based study units to incorporate into the online course. "Even though the focus of these activities might be student learning and curriculum, participants are 'learning by doing' - another basic tenet of adult learning" (McKenzie, 2001).
4. Recruit technology coaches. Newcomers to course management systems can derive an enormous benefit from working with a more seasoned partner. Schools should identify faculty who have developed a high degree of facility with the system, and ask them to make themselves available to help their colleagues gain a degree of comfort and confidence with the system as well. In the absence of such faculty, e-learning services companies might be contacted to assist with the training.

The best approach to faculty training involves blending the above strategies to help convince faculty that the system works, and that help is there if they need it. Many teaching faculty prefer to learn on their own, and are far less threatened by advice from their peers than they might be by a high-tech workshop filled with "techno-savvy" kids.

Why, Part I: Remembering the Basics of Teaching and Learning

Once the initial planning is completed, once an institution has discerned the general "will and skill" of its faculty to adopt and use new teaching and learning technologies and once it has established a support-system plan, administrators and program directors should understand that they are not likely to get their money's worth

-unfriendly." Effective tools should be able to reproduce and/or facilitate the teaching and learning experience of the typical college course. Thus it is vital to keep in mind the criteria of effective teaching and learning. Below is a chart detailing the course (CM) and learning management (LM) system features that can supplement, extend, and emulate the activities of teaching and learning.

Activities	Effective Teaching	Effective Learning	Optimizing CM/LM System Features
Reading/ Research	Instructors need to recognize and recommend adequate, if not excellent, course literature and resources.	Students need to be directed to adequate course literature and resources.	Systems with hypermedia-enabled library, database, annotation, categorization, and search features aid reading and research. Systems that display hypermedia clearly and make content easy to save and print are particularly effective.
Discussion	Instructors need to initiate and moderate class discussions.	Students need to discuss what they have learned with other students as well as their instructors.	Systems with asynchronous discussion forums, real-time AV and/or text chat, shared whiteboards, listservs, built-in email or email interfaces enhance, extend and capture discussion.
Lecture	Instructors need to disseminate their expertise on course subject matter in a timely, efficient manner.	Students need to access or avail themselves to expertise on course subject matter in a timely, efficient manner.	Systems accommodating hypermedia and streamed media can dispense video/audio lectures asynchronously or in real-time. Also web documents allow for immediate dissemination of and access to lecture notes and transcripts.
Assignments	Instructors need to announce, distribute, and acquire a variety of course assignments—to and from individuals and groups.	Students need to know about, access and submit course assignments.	Systems with hypermedia-enabled pages allow for immediate dissemination of and access to assignments; systems that simplify announcing assignments with features such as calendars, bulletin boards, and email alerts are particularly useful—as are systems that simplify or automate the assignment submission and review process. Also advantageous are systems that facilitate and track group work or group-produced assignments.
Examinations	Instructors need to assess student knowledge and abilities; they need to announce, distribute, and acquire course examinations—to and from individuals and groups.	Students need to know about, access and submit course examinations.	Systems with hypermedia-enabled test, survey, and test bank features allow for a wide range of test types; one that allow for restrictions (such as time limits) and programmable actions (such as randomized testing, automated grading, and alternate coursework based on score) can optimize the use of exams in teaching and learning.
Labs/ Practicums	Instructors need to supervise or gauge student skills or techniques in certain contexts at specific times.	Students need to practice and demonstrate skills or techniques they have learned in certain contexts at specific times.	Systems that offer real-time functions, such as AV or text chat, and interactive simulations, such as VRML and Shockwave media, can enhance or extend a traditional course features that are generally face-to-face or physical activities requiring and interactivity. Some developments in VR (virtual reality) programming look especially promising.
Relevance/ Timeliness	Instructors need to demonstrate the significance or relevance of concepts and theories.	Students need real-world examples; they need to appreciate the relevance of concepts and theories.	Systems that support a means of listing, displaying, linking to, or categorizing (by chronology, subject, author, etc.) relevant and timely events and news in a variety of media formats underscores the importance of course concepts and theories.
Consultation	Instructors need to meet with students privately to discuss individual concerns.	Students need the opportunity to meet with instructors privately to discuss their concerns.	Systems with an email interface or built-in email system, AV or text chat, or discussion forum allow for public, private, and group consultation.

Activities	Effective Teaching	Effective Learning	Optimizing CM/LM System Features
Feedback/ Grading	Instructors need to acquire feedback on their teaching from students as well as disseminate feedback on assignments, examinations, labs, and courses to the appropriate parties.	Students need prompt, clear feedback on assignments, examinations, labs, and courses.	Systems that include tests systems that automatically grade quizzes or organize survey data are particularly helpful, as are tools that include online grade books that store, calculate, and display grades for instructors and students. File transfer systems, email interfaces or built-in email systems also enhance the ease by which content can be assessed and returned.
Record/ Review	Instructors need to keep careful records of their work and their students' work.	Students need the opportunity to/facility for recording, studying and reviewing course content.	Tools that keep and display careful records and can graphically represent, extrapolate, export, archive, and/or recycle contents are advantageous. Also advantageous is the ease with which web content can be excerpted, downloaded, copied, and printed.

Note: The teaching and learning activities in this chart are loosely based on Neil Rudenstein's (1996) observations about the Web's potential in his special address at the Harvard Conference on the Internet and Society; also, a special thanks to Gail Darden (2001) at Eduprise, Inc. for her assistance in developing the "Optimizing CM/LM System Featur this table.

Why, Part II: Analyzing the Systems and Selling the Analysis

Online learning tends to be more self-directed than classroom learning, thus any system adopted must be easily adaptable to the style of the individual user, capable of producing "fast results." Neither instructors nor students want to be faced with hours of pointless searching in order to figure out how to use a new tool or how to find their documents. In light of the expense involved in setting up an institution with a new course or learning management system, a thorough examination of what that product offers is definitely in order. Keeping in mind the criteria of effective teaching and learning, and how these criteria are represented by available learning systems, one must perform a thorough exploration of tool features in order to satisfy the basic needs of instructors and students.

Course Tools	Collaboration Tools	Assessment Tools	Student/Management Tools
Content hub Announcements Index/Homepage Calendar Syllabus generator Built-in HTML editor Auto-linking (text) Auto-embedding (media) Context-sensitive help Content search Content upload	Discussion Forum --better optimized by search, compile, time/date stamp, attachment, archive, moderator, and anonymous post features. Email --built-in or email interface systems Real-time chat --better optimized by archive, multiple room, private messaging, AV, browsers, and whiteboard features.	Multiple question types Hypermedia support Automated grading Automated and pre-programmable feedback Test bank creation Randomized testing Surveying and statistical extrapolation Offline testing Regarding, grade changes Restrictions (timed, password protected, multiple attempts, availability) Online grade book	Grade viewing Student websites Content bookmarking Enrollment functions, including batch and individual uploads Student tracking Webpage tracking Read and unread message or submission alerts Annotation capability Change profile Link to offline content or CD-ROM

Note: The CM/LM system categories and features described in this chart are based upon a working document created by Jane Harris (2000) at Eduprise, Inc.

Examining CM/LM system features in light of how those features may augment teaching and learning will go a long way in assisting institutional decisions about which system is best for the institution. Indeed, a course or learning management system is not necessarily useful or cost-effective if what it does best is exchange data with the university system's back-end (such as Datatel, PeopleSoft, etc). Indeed, if it doesn't facilitate the data exchanging that instructors and students engage in on a daily basis, there won't be much to send, in the end, to the back-end. Finally, instructors are not easily sold on a product that puts the work of the university (teaching and learning) at risk in the name of a more efficient administrative data flow. They will, however, buy into a system that streamlines their efforts, maximizing their teaching while augmenting and enhancing student learning.

How, Part II: Revising the Plan

Regardless of the system ultimately adopted by an institution, a new set of instructor competencies will result from its implementation. Except for the case of the absolute beginner, some of these skills will already be present, i.e. the ability to open a program, the ability to work with word processing software, etc. Others will be new and specific to the chosen system--whether one needs to know how to develop online tests depends upon whether the system in place possesses a testing feature, for example.

In many cases, however, instructors will not make use of all the tools available in any one system. Certainly the instructor who does not wish to utilize an online discussion forum has no need to learn how to use one properly. Likewise, the instructor who does not intend to insert links into his online text has no need to be familiar with HTML. Developing a set of training goals or competencies can be complicated by the needs of the instructors, so they are worth careful consideration. Ultimately administrators and program directors will have to decide to what extent the training plans can be customized, and then integrate those goals and competencies into the simple or first-stage plan. In addition to professional development mentors, study groups, curriculum development teams, technology coaches, another useful approach to faculty training involves a sort of "show-and-tell" session, in which new users are introduced to those more familiar to the system. The more seasoned users can then show off their work, and discuss teaching approaches and system features that have proven to be particularly effective for them. Individual instructors can then determine, based on their own pedagogical approach, which features will be the most useful to them, and subsequently avail themselves of the training necessary to gain a level of comfort with these features.

Conclusion

Educational administrators and program directors have a great deal of information to sift through when investigating course and learning management systems. It is, however, in their best interest to take care in the process, and avoid "jumping on" the first or next "great thing" that comes along. Additionally, what might appear to be the best system to the administrator, may have so many bells and whistles that it is too cumbersome for faculty and students to use--what results are creative avoidance strategies--both on the part of the students and the instructors. While many teachers wish there were magic elves who could put their online courses together for them, or even a lowly graduate assistant who would be willing to spend a few hours a week typing material, all but a lucky few will be spared; most will end up doing this work themselves. It therefore behooves administrators and directors to keep in mind the level of "user-friendliness" in any course management system being considered. In addition, administrators should be aware that many instructors will balk at using online course materials if they do not stand to gain any recognition or reward for the time taken to learn how to work with the system and to prepare their materials for online dissemination.

Moreover, administrators should be talking to teaching faculty well before any system comes under consideration. Faculty want to have a say in which system is ultimately chosen, and may well balk at using one that, though glitzy and shiny, is impossible to use and is pedagogically unsound. Teaching faculty must also have ample opportunities to learn how to use the system. At the University of South Carolina, for example, we have found that many faculty hesitate to attend large, campus-wide Blackboard workshops, preferring instead to attend smaller, intra-departmental training sessions that are tailored to their specific instructional preferences.

In these smaller settings, faculty are able to work with faculty who teach in areas closer to their own, and whose ideas they can more easily adopt and adapt to suit their own needs.

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